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United States Environmental Protection Agency

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Illinois Indiana
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REMEDIAL INVESTIGATION COMPLETE for American Chemical Services Superfund Site Griffith, Indiana April 1992

THIS FACT SHEET WILL TELL YOU ABOUT:

- The history of the site
- The investigation results
- The potential health and environmental risks posed by the site
- The next steps in the remedial process
- How to get more information

PUBLIC MEETING:

EPA is completing the Feasibility Study for the ACS site, and will recommend a cleanup alternative in a Proposed Plan in the near future. At that time (possibly early June), these two documents will be made public, and a meeting held to explain the alternatives and request public comment.

EPA also offers the opportunity for a public meeting to discuss the Remedial Investigation (RI), the subject of this fact sheet. If you would like to attend a meeting regarding the RI, please call Karen Martin at (312) 886-6128 (direct), or (800) 621-8431 and leave a message. Please leave a daytime phone number when you call. Thank you.

Words in **bold type** are defined in a glossary on pages 5 and 6.

The Remedial Investigation (RI) for the American Chemical Services Superfund site in Griffith, Indiana, has recently been completed by a group of **potentially responsible parties (PRP's)** under the supervision of the U.S. Environmental Protection Agency (EPA) and the Indiana Department of Environmental Management (IDEM). The RI was conducted to determine the nature and extent of contamination at the site and surrounding environment. The RI report includes a risk assessment, which evaluates potential public health and environmental risks that the site might pose.

For more detailed information, please refer to the Remedial Investigation Report and the Risk Assessment in the public information repositories (locations, see page 4).

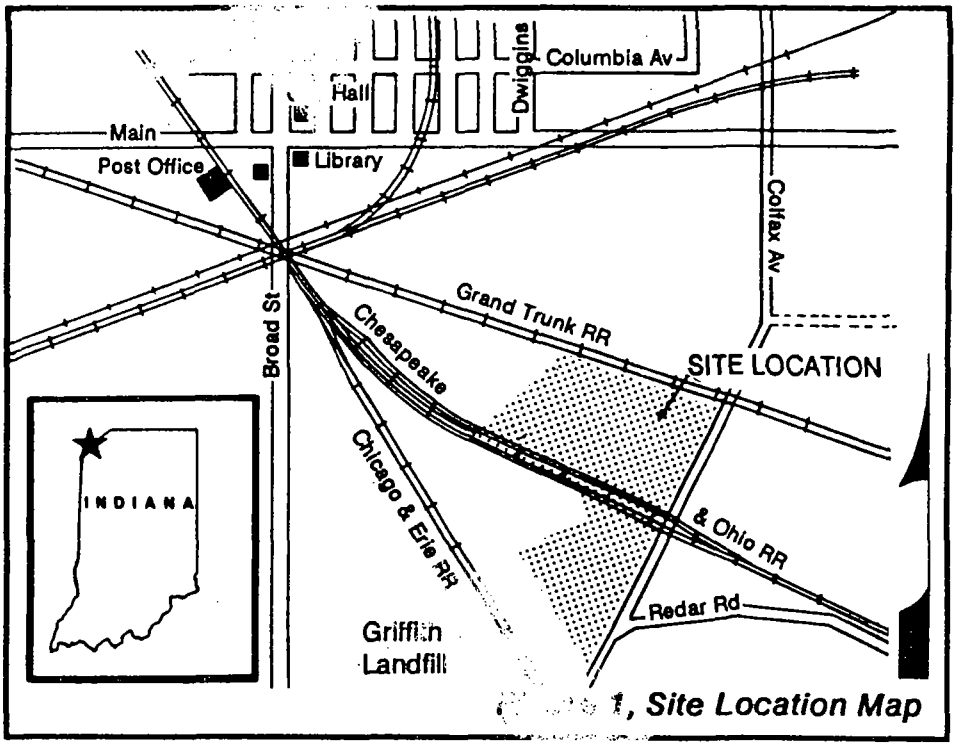

Figure 1, Site Location Map

SITE HISTORY

The American Chemical Services Superfund site (ACS), located at 420 S. Colfax Ave., Griffith, (See Figure 1) includes ACS property (19 acres), Pazmey Corp. property (formerly Kapica Drum, Inc.; two acres) and the inactive portion of the Griffith Municipal Landfill (approximately 15 acres) (See Figure 2). ACS began as a solvent recovery facility in May 1955, exclusively reclaiming solvents until the late 1960s. Reclaimed during this period were solvent mixtures containing **volatile organic compounds (VOC's)**, alcohols, **ketones**, and other **organic compounds** which contained various residues. Kapica Drum, Inc., began operations reconditioning 55-gallon drums in 1951 and began picking up drums from ACS in 1955.

In the late 1960s and early 1970s, small batches of chemicals were manufactured at ACS. Specific chemicals manufactured included barium naphtherate, brominated vegetable oil, lacquers and paints, liquid soldering fluid, and

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SITE HISTORY

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polyethylene solutions in polybutene. These early manufacturing operations also included bromination, treating rope with a fungicide, and treating ski cable.

Two on-site incinerators burned still bottoms, non-reclaimable materials generated from the site, and off-site wastes. The first incinerator started operating in 1966, the second in 1969, and burned about two million gallons of industrial waste per year. The incinerators were dismantled in 1970. The shells were cut up and scrapped; the burners and blowers remain on-site.

Batch manufacturing was expanded between 1970 and 1975. Additives, lubricants, detergents, and soldering flux were manufactured, and an epoxidation plant created a product called a plasticizer.

Since 1975, the small batch manufacturing and epoxidation plant operations have remained essentially the same. Kapica Drum, Inc., was sold to Pazmey Corp. in February 1980, which sold it to Darija Djurovic in March 1987. Kapica Drum, Inc., has not operated since 1987. In 1980, a 31-acre parcel of property to the west of the off-site containment area was sold to the City of Griffith for an expansion of the City's municipal landfill. The Griffith Municipal Landfill has been an active sanitary solid waste disposal facility since the 1950s. Solvent recovery operations continued until 1990 when ACS lost interim status under **Resource Conservation and Recovery Act (RCRA)** regulations due to an EPA enforcement action. **Semi-volatile organic compounds (SVOC's)** such as phenol, isophorone, napthalene, fluorene, phenanthrene, anthracene, bis (2-chloroethyl) ether, and phthalates were used and discarded at the site throughout its history.

A fact sheet, dated September 1990 and available in the information repositories, summarizes RCRA activities at the site.

ACS was placed on the National Priorities List (NPL), a roster of the nation's worst hazardous waste sites targeted for cleanup under Superfund authority, in September 1984. Approximately 400 drums containing sludge and semi-solids of unknown types were reportedly disposed of in an on-site containment area. (See Figure 2.) The Still Bottoms Pond and Treatment Lagoon #1 received still bottoms from the solvent recovery process. The pond and lagoon were taken out of service in 1972, drained, and filled with drums containing sludge materials. The off-site containment area was utilized principally as a waste disposal area and received wastes that included on-site incinerator ash, general refuse, a tank truck containing solidified paint, and an estimated 20,000 to 30,000 drums that were reportedly punctured prior to disposal. A Consent Order to perform a remedial investigation/ feasibility study was signed by the PRP's in June 1988. The remedial investigation began in 1989.

REMEDIAL INVESTIGATION RESULTS

Data for the RI report were collected during three phases and a Supplemental Technical Investigation (STI). The general purpose of Phase I was to identify each **zone of contamination** so that a more focused investigation could be implemented. Phase I consisted of aerial photograph reviews, taking site boundary surveys, geophysical surveying, monitoring-well installation and sampling, **piezometer** installation to characterize ground-water flow, leachate-well installation and sampling in the Griffith Municipal Landfill, collection of surface-water samples, effluent sampling, surface-soil sampling, sampling soil borings, sediment sampling, auger probes, aquifer testing, and test-pit excavations. Phase II, the STI and Phase III consisted of private-well sampling, documenting the horizontal and vertical extent of contamination,

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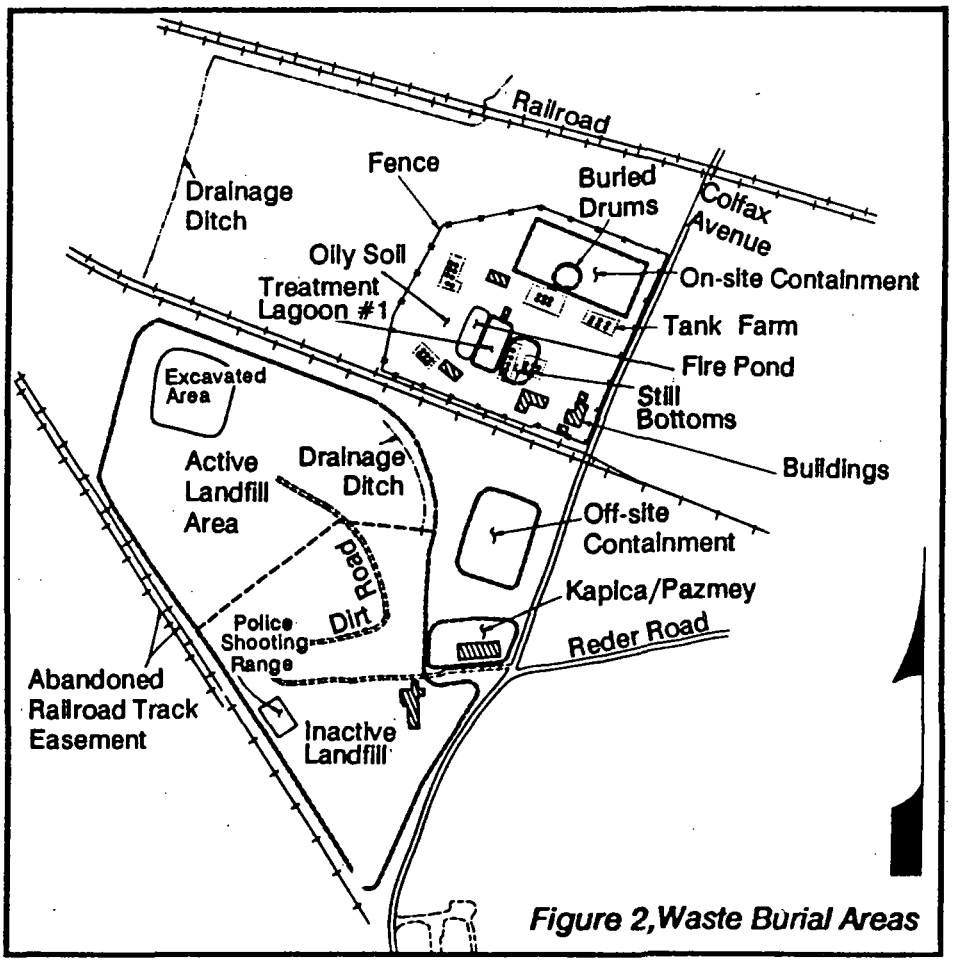

Figure 2,Waste Burial Areas

REMEDIAL INVESTIGATION RESULTS

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and identifying the varieties of chemicals in each zone, generally expanding the investigation, based on Phase I results.

Phase I Results

Phase I of the RI was completed in December 1989. Phase I indicated that there were large areas of buried contamination with a wide range of contaminants. The major categories of wastes include: **organic contaminants** without **polychlorinated byphenyls (PCB's)** (approximately 90% of total burried contamination), organic contaminants with PCB's (approximately 7%), and verious **heavy metals** (approximately 3%). The source areas are the on-site containment area, the still bottoms/ treatment lagoon and adjacent areas, and the off-site containment and Kapica/ Pazmey area. (See Figure 2.) The upper aquifer ground-water contamination was found to extend in several directions from the site.

More and detailed results of Phase I of the RI can be found in Section 5 of the RI Report.

Phase II, III and STI Results

The on-site containment source-area contaminants consist predominantly of organic contaminants without PCB's (15,000 cubic yards). Additional contaminants consist of a 50' x 50' buried drum area (estimated to contain 400 intact drums), and localized areas of organic contaminants with PCB's (980 cubic yards) and soils contaminated with metals (100 yards).

The still bottoms/treatment lagoon and adjacent source-area contaminants consist predominantly of organic contaminants without PCB's (22,000 cubic yards) and randomly distributed buried drums (estimated to contain 3200 partially filled drums). Organic contaminants with PCB's were not detected in the treatment lagoon area, but were detected in the still bottoms area (1000 cubic yards). Metals were detected in both areas (550 cubic yards). In an adjacent area, west of the existing fire pond, organic contaminants with PCB's (300 cubic yards) were detected.

The off-site containment source-area contaminants consist predominantly of organic contaminants without PCB's (51,000 cubic yards). However, organic contaminants with PCB's (5250 cubic yards) and metals (950 cubic yards) were detected primarily in one area in the northern portion, as well as at a number of small areas in the southern portion. General refuse, an estimated 20,000 to 30,000 drums, and a tank truck partially full of solidified paint were reportedly disposed of in this area. The Kapica/ Pazmey source-area contaminants consist of organic contaminants without PCB's (7200 cubic yards) and organic contaminants with PCB's (2300 cubic yards) in an area north of the Kapica building. Metal contamination is found in the west (700 cubic yards) and north (200 cubic yards) of the Kapica building.

Organic contaminants without PCB's including chlorinated ethanes, partially water-soluble products from gasoline, and oil and/or other **hydrocarbon** products (e.g. benzene, toluene, xylene) were found in the upper **aquifer** (See Figure 3). Lower-aquifer contamination relative to the upper aquifer is limited, both with respect to the nature of compounds detected and the extent. Contaminants do not extend off-site to lower aquifer wells. No organic contaminants were detected at any private residential well.

A discussion of the nature and extent of contamination can be found in Section 5 of the RI Report. A detailed list of contaminants and concentrations can be found in Appendix R of the RI Report.

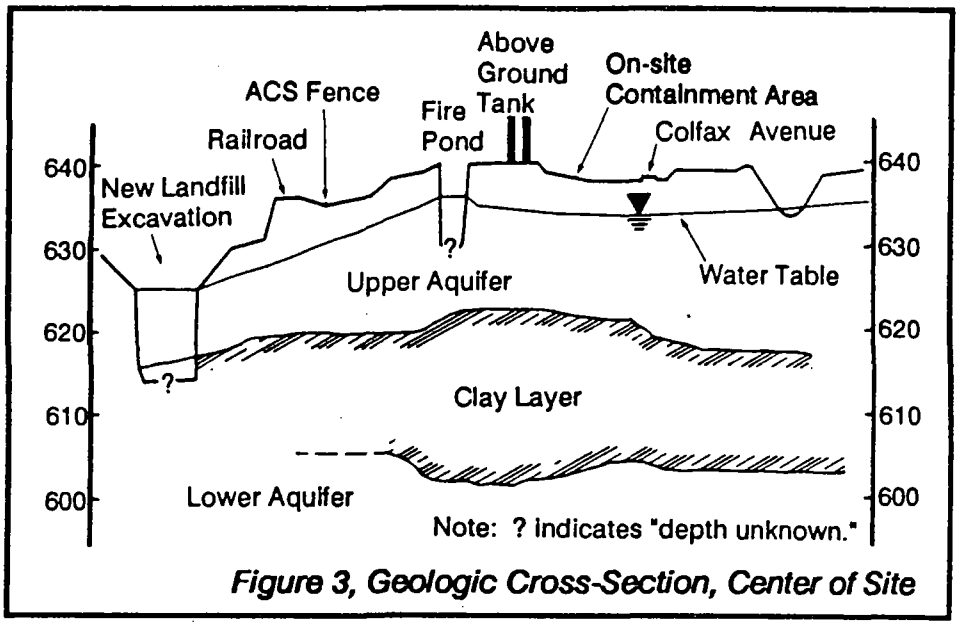

Figure 3, Geologic Cross-Section, Center of Site

POTENTIAL HEALTH RISKS

A major component of the RI was to assess potential risks to public health and the environment should the ACS site not be cleaned-up. This component is called a baseline risk assessment (BRA). Using information about what contaminants are present at the site, as well as the concentrations, amounts, locations, and ability of contaminants to travel off-site, a BRA was developed to determine what, if any, risks are posed by the site and if remedial action (cleanup) is warranted. Forty-four chemicals were chosen as being representative of the contamination at ACS.

The BRA indicates that current site risks, primarily from airborne contaminants escaping from buried wastes, are unacceptable, and that remedial action should be taken. Unacceptable risks are those that may result in 1 additional cancer in 10,000 to 1,000,000 people (expressed in scientific notation as 1×10^{-4} to 1×10^{-6}) exposed over a 70-year lifetime. This is in addition to what is normally expected in a given population (currently 1 in 3 for U.S. citizens in general). When the BRA indicates that site risk to an individual exceeds the 1×10^{-4} excess cancer risk end of the risk range, remedial action is warranted at a Superfund site.

VOC movement through soil and into the air from buried waste and contaminated soil was estimated by a computer model. This model is extremely conservative and represents a maximum release from all the source areas combined. Direct measurement of the quantity of VOC's released in the air from subsurface contamination was impossible to accomplish because of the presence of VOC's emanating from the operating ACS facility.

Most of the site contamination is underground in the form of buried waste or contaminated ground water. There are no current ground-water users that have been affected by the site.

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POTENTIAL HEALTH RISKS

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While EPA's estimates of risk are very conservative (they assume prolonged, regular, and massive exposure to contaminants), the risk levels at ACS are not acceptable to EPA.

The BRA also evaluated potential health risks should contamination not be addressed and should the site be developed for residential use. This future use scenario showed that future on-site residents could be exposed to an increased cancer risk, as well as other adverse health effects. Readers should understand this scenario is used only to measure risk. The unremediated site would not be developed for human use because of the levels of contamination found there.

The Agency for Toxic Substances and Disease Registry (ATSDR - a Federal agency that assesses potential risks to human health posed by individual sites and facilities) has met with nearby residents and heard their concerns about possibly elevated cancer rates in the area. To address these concerns, the ATSDR will gather more data on cancer cases from the Indiana Cancer Registry in order to determine whether there is a high frequency of cancer occuring in the 8-block area north of the ACS site.

ECOLOGICAL RISKS

An ecological assessment to evaluate negative effects on plants and animals was performed by the PRP group (and modified by EPA) for the area surrounding the ACS site. Based on EPA's assessment, upland (terrestrial), wetland, and aquatic receptors may be negatively affected by contaminants present in environmental media (such as soils, surface water) within the ACS vicinity. As with the baseline risk assessment, conservative assumptions were used throughout this ecological assessment.

Detailed results and interpretations are presented in the Ecological Assessment of the RI Report, September 1991, Section 7.2.

THE NEXT STEPS

At this time, the PRP's, under EPA direction, are conducting a feasibility study (FS) to evaluate possible methods of cleaning up (remedying) site contamination. The evaluation of each alternative will consider its:

- ability to protect human health and the environment
- compliance with laws and regulations
- short and long-term effectiveness
- ability to be implemented
- cost
- state and community acceptance

When the study is completed (projected for April 1992), a fact sheet called a Proposed Plan will be written and made available to the public. The Proposed Plan will outline each alternative and present EPA's recommended remedy. The public will have an opportunity to comment on the FS and Proposed Plan, either in writing, or at a public meeting which will be scheduled near the start of the public comment period.

Typical remedies considered for contamination such as that found at ACS include **soil vapor extraction, containment, thermal treatment, air stripping,** and **carbon adsorption.** These will be evaluated in the FS and presented in the Proposed Plan.

FOR MORE INFORMATION

Two public information repositories have been established at the Griffith Town Hall, 111 N. Broad St., and the Griffith Public Library, 940 N. Broad Street. Technical and other documents are sent there, and the public is welcome to review them.

You may also contact the following EPA personnel:

Karen Martin (P-19J)
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(312)886-6128

Wayde Hartwick (HS-6J)
Remedial Project Manager
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U.S. Environmental Protection Agency
77 W. Jackson
Chicago, IL 60604
Toll free (9-4:30 central time): (800)621-8431

GLOSSARY

Aquifer - a zone or layer of rock, soil, sand or other porous material, found below the ground surface, that is capable of holding and yielding usable quantities of water; often a main source of drinking water.

Heavy Metal - a family of inorganic elements that include arsenic, lead, chromium, cyanide, mercury, zinc, and others; heavy metals can be toxic at relatively low concentrations.

Hydrocarbon - an organic chemical compound made up primarily of hydrogen and carbon; usually derived from petroleum products.

Inorganic compounds - chemical compounds that do not contain hydrogen, carbon and oxygen; metals are examples of inorganic compounds.

Ketones - compounds found in resins, paint removers, cement adhesives, and cleaning fluids (e.g., acetone, 2-butanone, 2-hexanone, 4-methyl-2-pentanone, isophorone).

Organic compounds/contaminants - chemicals composed mainly of carbon, hydrogen and oxygen, and found in materials such as solvents, soils and pesticides; they are toxic in many forms.

Plasticizer - a compound associated with plastics and plastic making processes (e.g., phthalates).

Piezometer - open ended pipe installed much like a ground water monitoring well, used to measure water levels and pressure surfaces in order to estimate ground water flow directions.

Polycyclic Aromatic Hydrocarbon (PAH) - a group of compounds associated with and derived from coal and oil, and the incomplete combustion of carbon-containing materials.

Polychlorinated biphenyl (PCB) - a family of organic compounds used since 1926 in electric transformers as insulators and coolants, in lubricants, carbonless copy paper, adhesives, and caulking compounds. PCB's are extremely persistent in the environment because they do not break down into less harmful chemicals. They are stored in human and animal fatty tissues. Long-term exposure can cause liver damage and has been shown to cause cancer in laboratory animals.

Potentially responsible party (PRP) - a person, company or other legal entity that could be held liable for study and cleanup costs of a Superfund site; PRP's include owners, operators, generators, and haulers of hazardous waste.

Receptor - an individual, group of individuals, animal, or plant potentially exposed to a contaminant.

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MAILING LIST

If you did not receive this fact sheet in the mail, you are not on the mailing list for the American Chemical Services Superfund site. To add your name or to make a correction, please fill out this form and mail to:

Karen Martin (P-19J)
Community Relations Coordinator
U.S. Environmental Protection Agency
77 W. Jackson Blvd.
Chicago, IL 60604

NAME_____

ADDRESS_____

CITY, STATE, ZIP_____

PHONE NUMBER_____AFFILIATION_____

GLOSSARY

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Resource Conservation and Recovery Act (RCRA) - a federal law that established a regulatory system to track hazardous substances from the time of generation to disposal. The law requires safe and secure procedures to be used in treating, transporting, storing, and disposing of hazardous substances. RCRA is designed to prevent new, uncontrolled hazardous waste sites.

Semi-volatile organic compound (SVOC) - a compound similar in nature to VOC's (see below). SVOC's are less volatile than VOC's and generally move around less in the environment. SVOC's are used in the manufacture of drugs, cosmetics, soaps, paints, fertilizers, explosives, and many other products.

Still Bottom - a mixture of compounds generally settled out of suspension from standing waste water.

Soil vapor extraction - a technology designed to pull air containing hazardous substances through soil and into pipes that carry it to a treatment facility designed to remove the contaminants from the air, and discharge the treated air either into the environment or back into the soil.

Source - where a hazardous substance is released into the environment; a source could be from a spill area, a factory, or a portion of a landfill where hazardous substances were dumped.

Thermal Treatment - a technology designed to destroy hazardous substances through high temperatures. Specific thermal treatment technologies considered for ACS include incineration, where combustion temperatures range from 1500° F - 3000° F; and low temperature thermal treatment, where combustion temperatures range from 450° F - 850° F.

Volatile Organic Compound (VOC) - a compound composed of carbon and hydrogen, characterized by a tendency to readily evaporate at room temperature. VOC's disappear more quickly from surface water than from ground water. Examples include lighter fluid, paint thinner, and components of gasoline.

Zone of contamination - an area in which contamination is found, either in the ground, the water, a landfill, or other defined area.

EPA

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